BLM LIBRARY
88081546

U.S. DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

PRELIMINARY ASSESSMENTS AND SITE INSPECTIONS
CONTRACT NO. AA852-CT0-0026

OCTOBER 4, 1991

FINAL
PRELIMINARY ASSESSMENT
PROJECT PLANS

OLD SARATOGA LANDFILL
RAWLINS DISTRICT, WYOMING

C.C. JOHNSON & MALHOTRA, P.C.

ENVIRONMENTAL ENGINEERS & SCIENTISTS

TD
1042
.W8
043
1991

1703-0L

CCJM
ENVIRONMENTAL ENGINEERS & SCIENTISTS

SILVER SPRING
CHICAGO
DENVER
DETROIT
GRAND RAPIDS

October 4, 1991

Mr. Rhio Jackson
Contracting Officer Representative
U.S. Department of the Interior
Bureau of Land Management
Service Center Bldg. 50
Denver Federal Center
Denver, CO 80225-0047

BLM Library
Denver Federal Center
Bldg. 85, OC-521
P.O. Box 25047
Denver, CO 80225

Contract Number AA852-CT0-0026

Dear Mr. Jackson:

C.C. Johnson & Malhotra, P.C. is pleased to submit the Final Preliminary Assessment Project Plans for the Old Saratoga Landfill, Wyoming, site. I have enclosed two copies for your use. I have also sent two copies each to the BLM State and District Offices, and three copies to Mr. Dennis Beissel at NUS Corporation. Please let me know if you need any additional information concerning this submittal.

Very truly yours,

Rolf Reindl
Project Manager

cc: K. Patterson, BLM Wyoming State Office
D. Larsen, BLM Rawlins District Office
D. Beissel, NUS
J. Patel, CCJM
File: WY-SAR.FPP

#15313927799

ID: 88081546

TD
1042
.W8
043
1991

BLM Library
Denver Federal Center
Bldg. 85, OC-521
P.O. Box 25047
Denver, CO 80225

FINAL

PRELIMINARY ASSESSMENT

PROJECT PLANS

OLD SARATOGA LANDFILL

RAWLINS DISTRICT, WYOMING

OCTOBER 4, 1991

CONTRACT NUMBER AA852-CT0-0026

Prepared by: Rolf Reindl, for
Scott Kendall
Geological Engineer

Date: 10-3-91

Approved by: Rolf Reindl
Rolf Reindl
Project Manager

Date: 10-4-91

SITE

WORK PLAN

TABLE OF CONTENTS

SECTION			PAGE
1.0	INTRODUCTION		1
	1.1	Preliminary Assessment Process	1
	1.2	Site Location	2
	1.3	Site Description	3
2.0	SITE BACKGROUND		4
3.0	HUMAN HEALTH AND ENVIRONMENTAL CONCERNS		5
4.0	PREVIOUS SAMPLING		6
5.0	RESPONSE ACTIVITIES		6
6.0	PROPOSED FIELD INVESTIGATION		7
7.0	REFERENCES		9

ATTACHMENTS

Attachment 1 -	Location Map
Attachment 2 -	Area Map
Attachment 3 -	Site Map and Sample Locations
Attachment 4 -	Proposed Samples
Attachment 5 -	Organic Target Compound List (TCL) and Inorganic Target Analyte List (TAL)
Attachment 6 -	Proposed Schedule

1.0 INTRODUCTION

1.1 Preliminary Assessment Process

The Preliminary Assessment (PA) process consists of activities conducted off-site and on-site in order to classify a site as to the degree of risk it may pose to human health and the environment. Activities involve collecting and evaluating information concerning site history and site use, including records of potentially hazardous materials disposed or believed to have been disposed at the site, and information regarding the environmental setting of the site and surrounding area.

All information required to Pre-Score the site, using the revised Hazard Ranking System (rHRS) model, is gathered during conduct of the PA. This information includes information concerning the location, size (areal or, preferably volume estimates) and number of potential source areas, the primary and secondary population targets in the site area, and information concerning migration and exposure pathways including ground water, surface water, soil exposure, and the air pathway. Pathway characteristics such as sensitive environments, drinking water intakes, human food chain targets and environmental threat targets for the surface water pathway, waste characteristics, and the likelihood of release for the ground water, surface water and air pathways will be described and evaluated in the PA Report. The likelihood of exposure and resident population threat for the soil exposure pathway will also be described and evaluated in the PA Report.

On-site activities consist of an initial site visit conducted on May 30, 1991, and subsequent sample collection. The purpose of the initial site visit is to gain general knowledge of the site and its environs, gather health and safety data, produce a site sketch, and identify potential sampling locations and exposure or migration routes. This information is used in preparing the site-specific Work Plan, Field Operations Plan, Health and Safety Plan, and Quality Assurance Plan.

After sample collection, the environmental samples are analyzed by a current EPA Contract Laboratory Program (CLP) laboratory using EPA hazardous substance methodology. Generated data will be validated or assessed in accordance with EPA CLP guidelines.

A PA Report will be prepared at the conclusion of all activities. The PA Report will contain a description of the site background, a summary and description of waste sources, transport pathways, receptor populations, designation of the site using BLM site classification definitions, a rHRS Pre-Score, and conclusions and recommendations. The PA Report will also include a completed U.S.EPA Form 2070-12.

Sites will be designated based on an assessment of the degree of potential hazard represented by the site per BLM site classification definitions. Sites posing an imminent hazard to human health or the environment (Class IV) will be identified either during the initial site visit or during the information gathering and evaluation phase. Class I, II, and III sites will be identified during the assessment of all site-information. Class II or III sites will generally be recommended for further study. Class I sites are those having no further remedial action planned (NFRAP).

1.2 Site Location

The Old Saratoga Landfill is an inactive sanitary landfill located in the Rawlins, Wyoming, Bureau of Land Management (BLM) District, Great Divide Resource Area. Approximate geographic coordinates of the site are 41° 27' 30" North latitude and 106° 46' 50" West longitude. The exact location of the site is the NE 1/4 of the SE 1/4 of the NW 1/4 of the SW 1/4 and SE 1/4 of the NE 1/4 of the NW 1/4 of the SW 1/4 of Section 7, Township 17 North, Range 83 West. The site is situated one mile east of the Town of Saratoga in Carbon County, Wyoming. The Old Saratoga Landfill can be reached by traveling south on Route 130 to the Town of Saratoga and left on Pike County Road for 1.5 miles. The landfill is located less than one-third mile southeast of Saratoga Lake.[1] The landfill is located on BLM land and the surrounding land is owned by the Wyoming Game and Fish Commission (G&FC).[1] Attachment 1 shows the location of the site on a composite of the United States Geological Survey (USGS) Saratoga, Finley Reservoir, Oberg Ranch and Overland, Wyoming, 7.5-minute series quadrangle topographic maps.[2,3,4,5] Attachment 2 shows major surface features within a four-mile radius of the site.

1.3 Site Description

The Old Saratoga Landfill is an inactive sanitary landfill consisting of approximately five acres of BLM administered land.[1,6] This land was used by the Town of Saratoga until a new landfill was opened in 1978, approximately one mile to the east.[10,11] Attachment 3 presents a sketch of the site. The site has not been assigned a CERCLIS number or a Federal Facility Identification (FID) number.[1] If available, the CERCLIS and FID numbers will be included in the PA Report.

No structures are located at the landfill. The nearest regularly occupied buildings include several residences located approximately one-third mile northwest of the site along Saratoga Lake. The nearest population center is the Town of Saratoga located one mile west of the landfill, which had an estimated population of 1,969 (1990 Census).[1] The population within a four-mile radius of the site, based upon area USGS topographic quadrangle maps, and the average number of residents per household for Carbon County, is approximately 2,000.[2,3,4,5,10] The predominant land uses in the area are agriculture, recreation, and ranching.[1,6]

The topography of the area consists of generally flat to gently rolling hills.[1,6] The landfill is situated in a bowl-shaped topographic depression, with the sides of the landfill sloping to a low point in the center of the landfill. Surface water that collects at this low point from the sides of the landfill either infiltrates or evaporates. Although the site is covered with grasses, it does not appear that a cover has been placed over the landfill. Two drainages are located along the northwestern side of the landfill. Water from these drainages flows down the slopes outside the depression and into Saratoga Lake, which bounds the site to the north and west. Range lands are located to the north beyond the lake, and the Town of Saratoga and range land are located to the west beyond the lake. The Old Baldy Club, a local golf resort, and the North Platte River and its flood plain are located south of the site. Range land also occurs to the east.

Elevation of the landfill is approximately at 6,860 feet above mean sea level (MSL). The average annual temperature is 43 °F, with an average of 90 frost free days each year.[7] The average annual precipitation is approximately nine inches, and the prevailing wind direction is from the southwest at an average speed of 14.5 mph.[7]

The site is not enclosed by a fence nor does the access road have a gate. Local residents use a road that is located along the western side of the landfill to access parts of Saratoga Lake. Saratoga Lake is a closed surface water body, approximately 400 acres in size. Surface water from the western and northwestern slopes of the site flow into Saratoga Lake. Two drainages were identified as being pathways for surface water migration from the landfill to the lake. These drainages, at the northwest and southwest ends of the landfill, flow to the northwest. The 15-mile in-water surface water segment consists of these drainages and Saratoga Lake. Saratoga Lake is stocked with trout by the Wyoming GF&C and is a popular fishing area.[1,6] The North Plate River is located one mile west of the landfill. This river serves as a recreational resource and as the source of potable water for the Town of Saratoga; however, it is not part of the 15-mile in-water surface water segment. The nearest potable well is located at the houses across Saratoga Lake from the landfill. City water is not available outside town limits.

The soils in the area consist of loamy fan terraces and associated deep soils.[7] The landfill is underlain by the Tertiary North Park Formation.[8] The upper sequence of the North Park is fine to medium grained sandstone, tuff and limestone beds ranging up to 700 feet thick.[8] The lower sequence is a basal conglomerate less than 100 feet thick.[8] USGS studies estimate an average transmissivity of 4,000 ft^2 per day for the North Park Formation.[8] Well depths locally range from 30 feet to over 300 feet.[9] Static water levels range from 10 feet to over 100 feet below ground surface, and typically range from 40 to 60 feet below ground surface.[9] The North Park Formation appears to be the most important ground water source in the area. The water quality of the aquifer is excellent.[6]

2.0 SITE BACKGROUND

The Old Saratoga Landfill was operated by the Town of Saratoga from an unknown starting date until 1978 when the new Saratoga landfill was opened.[6,12] Initially, landfill operations where conducted at the site when the Wyoming G&FC managed the land.[11] In 1958, the Wyoming G&FC acquired the land around Saratoga Lake from BLM (Patent No. 1182845) when Saratoga Lake inundated its adjacent lands as a result of damming.[11] Part of this land included the area where the landfill is located.[11] In 1968, an inspection performed by BLM reported that the land was being used for landfilling, and that this may require the Wyoming G&FC to return the land to BLM.[11] A cut and fill method was used to place wastes in the landfill. On August 17, 1970, an area of 15 acres containing

the Old Saratoga Landfill was returned to BLM.[11] The landfilling continued at the Old Saratoga Landfill until July 1978, when BLM issued a Recreation and Public Purposes (R&PP) Act lease to the Town of Saratoga for a new landfill located one mile east of the Old Saratoga Landfill.[6] It is believed that the Town of Saratoga discontinued use of the old landfill when the new landfill was approved in 1978.[6,12] If this is the case, then the minimum period of operation of the Old Saratoga Landfill is approximately 10 years. No wastes were observed at the landfill during the site visit.

BLM records indicate that the quantities and types of waste accepted at the landfill are not known, although it is suspected that the landfill received only residential and municipal wastes.[7] The BLM case file indicates that there is no record of any hazardous waste having been accepted at the landfill.[1] There also are no records indicating that septic wastes or sludge were disposed at the landfill. The Louisiana Pacific Saw Mill is located less than one mile from the site, but there is no evidence that any hazardous waste from the Mill was accepted at the landfill.

In 1978, BLM reported that the town required the new landfill because the old landfill was located, without approval, on BLM land.[6] Since the town did not have a lease or approval from BLM to use the land as a landfill, it was considered to be trespassing on Wyoming G&FC property.[6] The site has been monitored by BLM and the Wyoming Department of Environmental Quality(DEQ).[1] BLM monitored the Wyoming G&FC land around the lake to insure that the land was being used for recreational purposes only.[11] A memo from BLM to the Wyoming G&FC on November 22, 1968, stated that a recent inspection revealed that the Town of Saratoga landfill was located on the G&FC land.[11] Later inspections of the Old Saratoga Landfill identified violations of Wyoming DEQ regulations and the Wyoming Environmental Quality Act.[6] BLM reported that the Old Saratoga Landfill does not meet the physical requirements of soil, water table and compatibility of surrounding land use for a sanitary landfill.[6] Carbon County records do not list any environmental liens in this area.[1]

3.0 HUMAN HEALTH AND ENVIRONMENTAL CONCERNS

The Old Saratoga Landfill, as it currently exists, does not appear to pose an imminent threat to human health or the environment. Potential contaminant transport mechanisms include overland runoff via the drainages on the northwest toward Saratoga Lake, ground water originating as surface water

that has collected on the bowl-shaped landfill and infiltrated through the wastes, and direct contact with or air transport of potentially contaminated surface soils at the landfill.

Potential receptors in the area include nearby populations, recreational users of the site and surrounding area, and vegetation and wildlife near the landfill. Cattle and wildlife scat were noticed at the landfill during the initial site visit conducted on May 30, 1991. A bog, or freshwater wetland, is located at the north end of the lake and represents a sensitive environment.

Residents of the Town of Saratoga are provided portable water by the town.[6] City water is available within town limits. The North Platte River is the source of potable water for the Town of Saratoga. Overland drainage from the site flows into Saratoga Lake and not towards the North Platte River. The nearest residences to the site are located one-third mile to the northwest along the shores of Saratoga Lake. These residences are not on city water. There are 100 to 120 residences or, based upon an average of 2.82 people per residence, approximately 282 to 388 residents, within a four-mile radius of the site that are not connected to the municipal water system and obtain potable water from residential wells.[1,2,3,4,5,10] The population density within 1/4, 1/2, 1, 2, 3 and 4 miles of the site and an estimate of the number of residents provided potable water by the Town of Saratoga and by residential wells will be provided in the PA Report.

4.0 PREVIOUS SAMPLING

There are no records of previous sampling at the Old Saratoga Landfill. A well located in Township 17 North, Range 83 West, Section 9, two miles east of the Old Saratoga Landfill and drilled into the North Park Formation, was sampled by the USGS.[8] The sample was analyzed for silica, magnesium, sodium, potassium, bicarbonate, carbonate, sulfate, chlorine, fluorine, nitrate, boron, total dissolved solids (TDS), calcium carbonate, specific conductance, and pH.[8] The sample was not analyzed for hazardous substances.[8]

5.0 RESPONSE ACTIVITIES

There are no records of response activities at the Old Saratoga Landfill.

6.0 PROPOSED FIELD INVESTIGATION

The PA field investigation for the Old Saratoga Landfill will focus on determining whether hazardous substances are present in soils at the landfill or in overland drainages at the site. The PA field investigation will include collecting soil samples from an area on the landfill where overland drainage water collects, and sediment samples from drainages leading from the landfill towards Saratoga Lake.

A total of two sediment and two surface soil samples will be collected. Attachment 3 presents a site map showing the proposed sample locations and site drainages. The samples proposed for the PA are as follows:

- One background soil sample (SAR-PA-SL01) will be collected from a nearby location that has not been impacted by landfill operations. Sample results will be compared to the results of on-site soil and sediment samples.

- One soil sample (SAR-PA-SL02) collected just below the surface at the lowest point on the landfill. Since the landfill is in a bowl-shaped depression, surface water from most of the landfill drains to this point and either infiltrates or evaporates. This sample location was selected to determine whether hazardous substances are present in soils at this location.

- One sediment sample (SAR-PA-SD01) will be collected from the observed drainage located along the northwestern side of the landfill. This sample will be used to identify whether hazardous substances are present in this drainage.

- One sediment sample (SAR-PA-SD02) will be collected from the observed drainage located along the southwestern side of the landfill. This sample will be used to identify whether hazardous substances are present in this drainage.

Attachment 4 presents a summary of the proposed samples and analyses. All samples will be sent to CompuChem Laboratories for analysis under EPA Contract Laboratory Program (CLP) protocols. All samples will be analyzed for Target Compound List (TCL) organics and Target Analyte List (TAL) inorganics. A trip blank (SAR-PA-QC01) will be included in the shipment and will be analyzed for volatile organics only. The TCL and TAL are presented in Attachment 5.

Procedures for collecting field samples are identified in the BLM Project Standard Operating Procedures Manual (SOPM) which is referenced in the Site Field Operations Plan (FOP) following this Work Plan. The Site Health & Safety Plan (HASP) and Quality Assurance Plan (QAP) also follow this Work Plan.

A proposed schedule for the PA is presented in Attachment 6.

REFERENCES

OLD SARATOGA LANDFILL

REF. NO.	DATE	SOURCE	RELIABILITY
1	1991	Old Saratoga Landfill Land Status Assessment, Site Background Report, BLM.	R
2	1961	Saratoga, Wyoming, USGS 7.5 minute quadrangle	FR
3	1983	Finley Reservoir, Wyoming, USGS 7.5 minute quadrangle	FR
4	1983	Oberg Ranch, Wyoming, USGS 7.5 minute quadrangle	FR
5	1982	Overland, Wyoming, USGS 7.5 minute quadrangle	FR
6	07-24-78	BLM Environmental Assessment Record for City of Saratoga Sanitary Landfill lease application.	R
7	1985	Land Status Assessment, City of Saratoga Landfill, BLM.	R
8	05-1-91	Memo from BLM Area Geologist (Mark Newman) to District Soil Scientist concerning geology of the Old Saratoga Landfill area.	R
9	11-13-89	Report of Wyoming Water Rights. List of well locations, depths of wells and depths to static water.	R
10	03-1988	Estimates of Households, for Counties: July 1, 1985, U.S. Department of Commerce, Bureau of the Census.	FR
11	08-17-70	Series of letters concerned with the title transfer of land from the Wyoming Fish and Game Commission to BLM.	R
12	07-24-78	BLM Modified Land Report concerning New Landfill for City of Saratoga.	R

R - Reliable
FR - Fairly Reliable

ATTACHMENTS

Attachment 1 - Location Map

Attachment 2 - Area Map

Attachment 3 - Site Map and Sample Locations

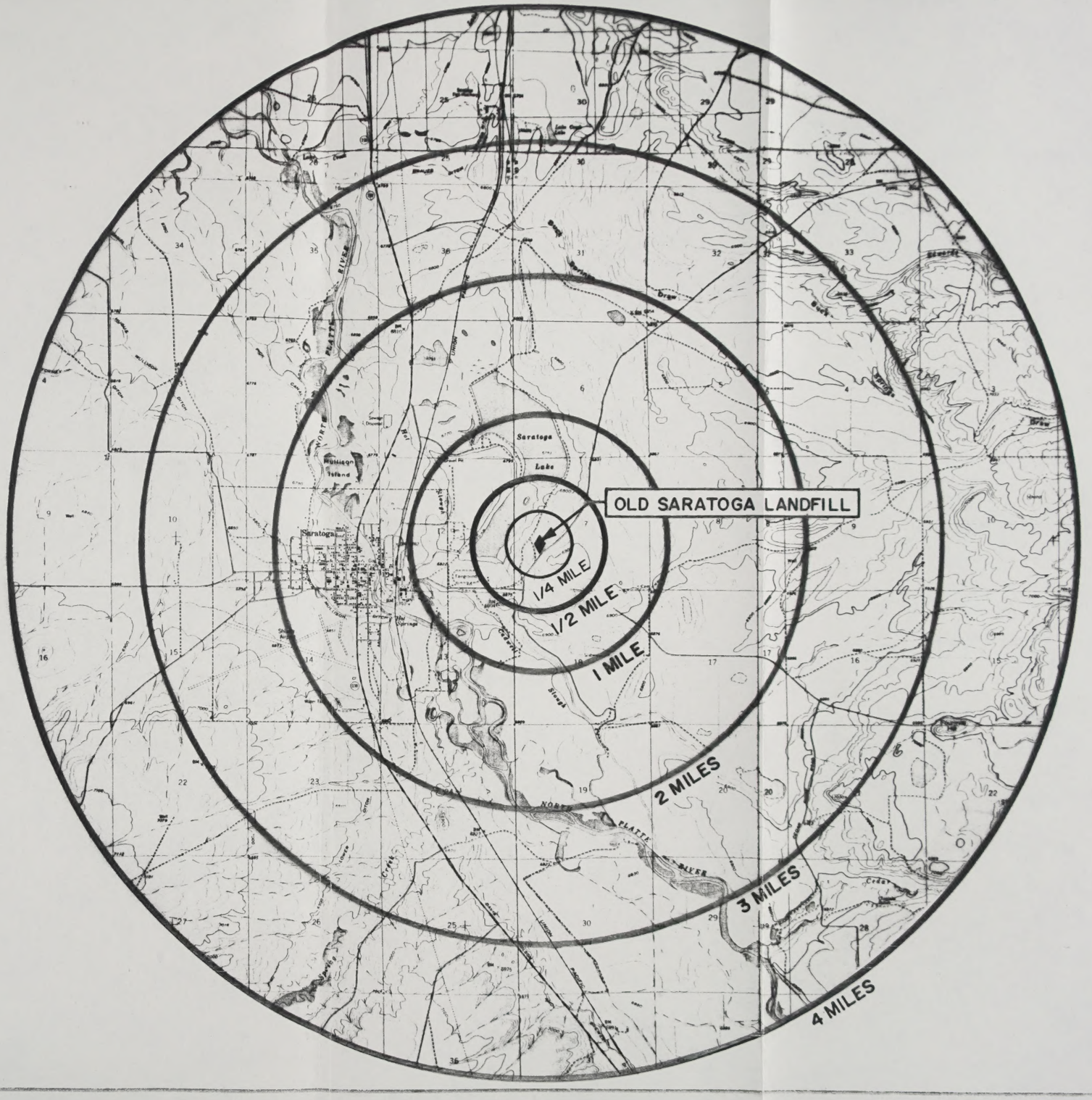
Attachment 4 - Proposed Samples

Attachment 5 - Organic Target Compound List (TCL) and Inorganic Target Analyte List (TAL)

Attachment 6 - Proposed Schedule

ATTACHMENT 1

LOCATION MAP



N

W E

S

1 MILE 0 1/2 1

SCALE IN MILES

SITE

T17N
R 83W SEC. 7

SCALE:	1:48,000
SOURCE:	USGS TOPO MAPS SARATOGA, WY. 1961 FINLEY RESERVOIR, WY. 1983 OBERG RANCH, WY 1983 OVERLAND, WY. 1982

BUREAU OF LAND MANAGEMENT

OLD SARATOGA LANDFILL
RAWLINS DISTRICT, WYOMING

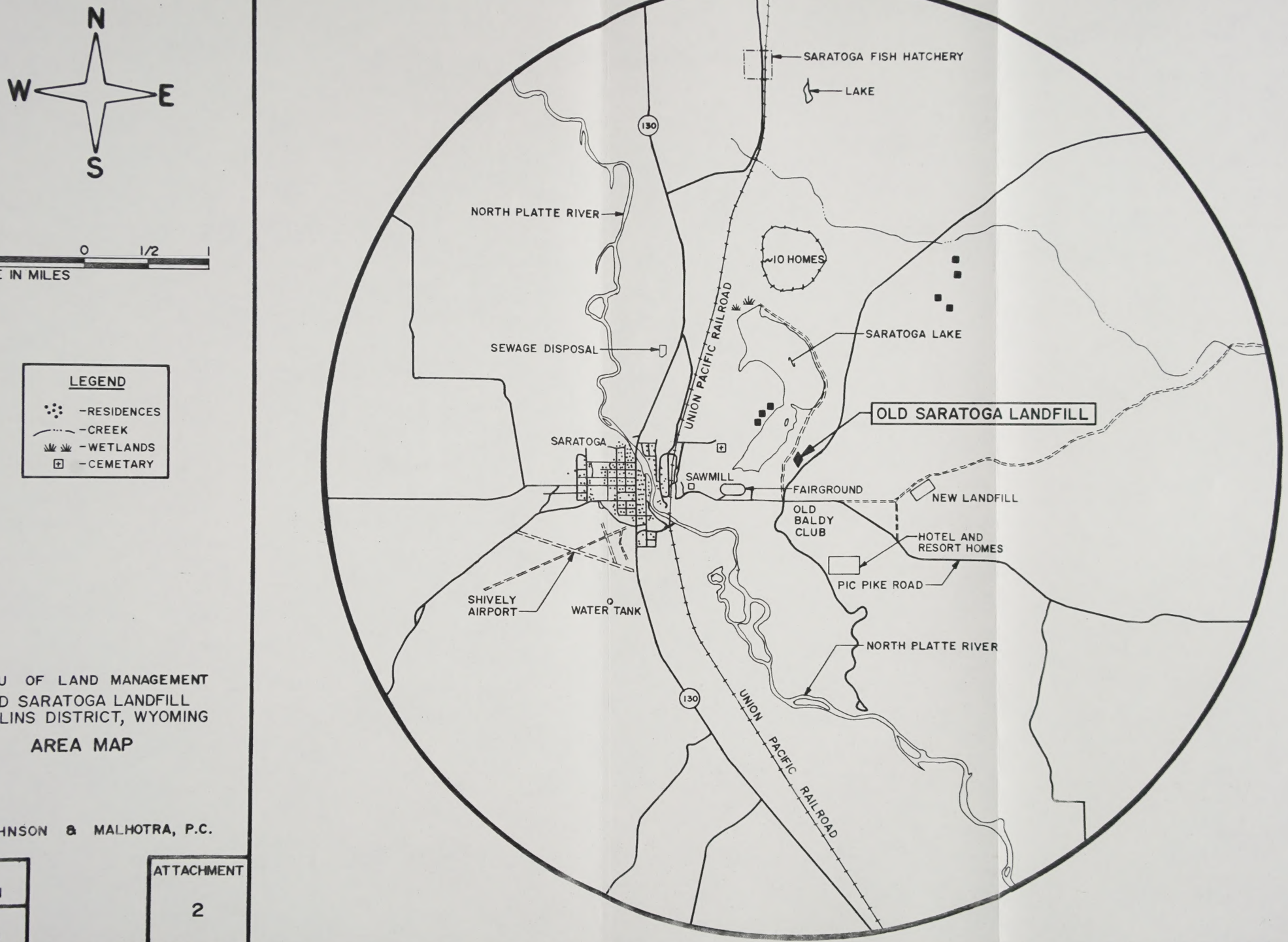
LOCATION MAP

C.C. JOHNSON & MALHOTRA, P.C.

SCALE AS SHOWN	ATTACHMENT 1
DATE SEPT. 1991	

ATTACHMENT 2

AREA MAP



BUREAU OF LAND MANAGEMENT
OLD SARATOGA LANDFILL
RAWLINS DISTRICT, WYOMING

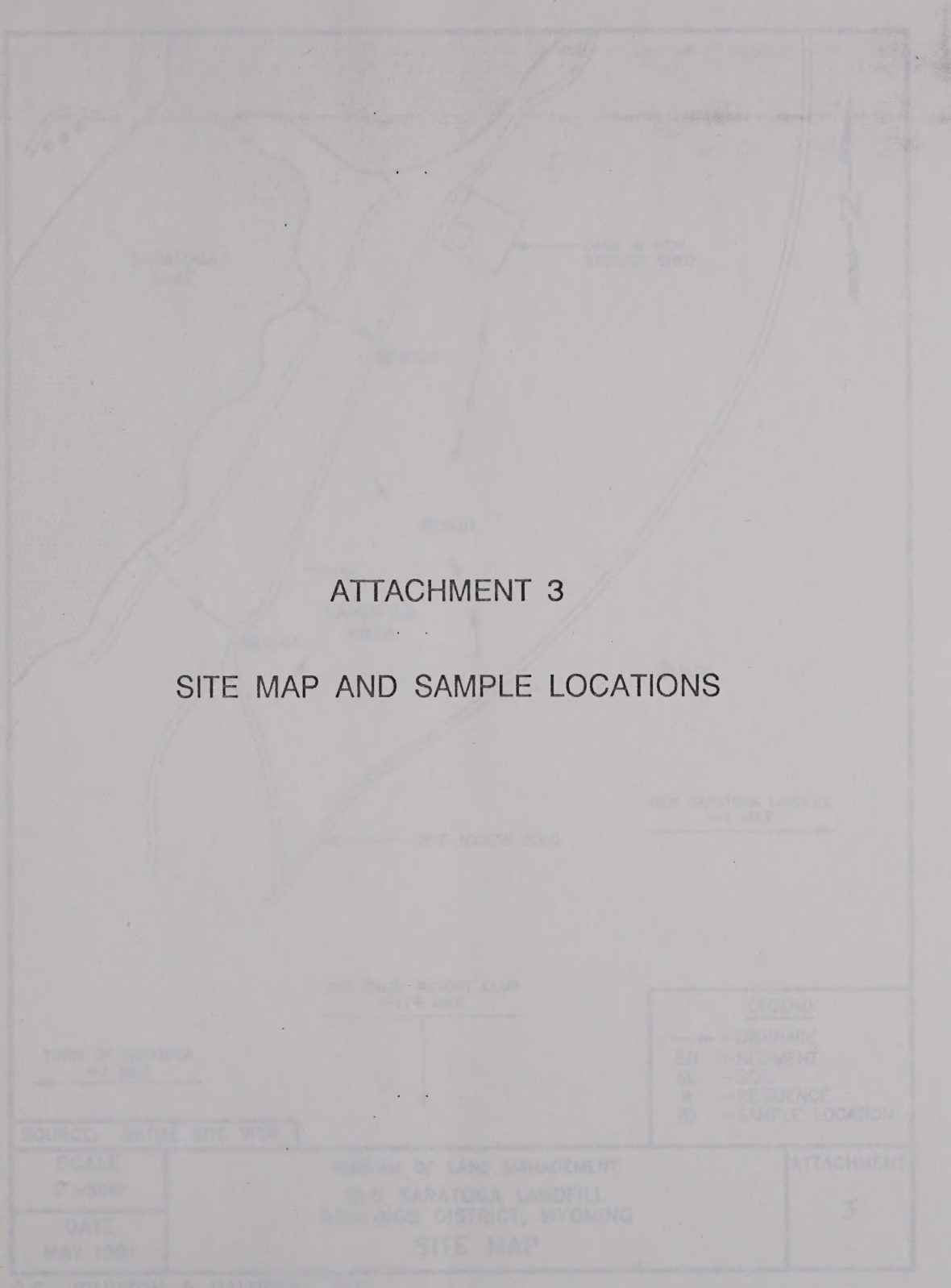
AREA MAP

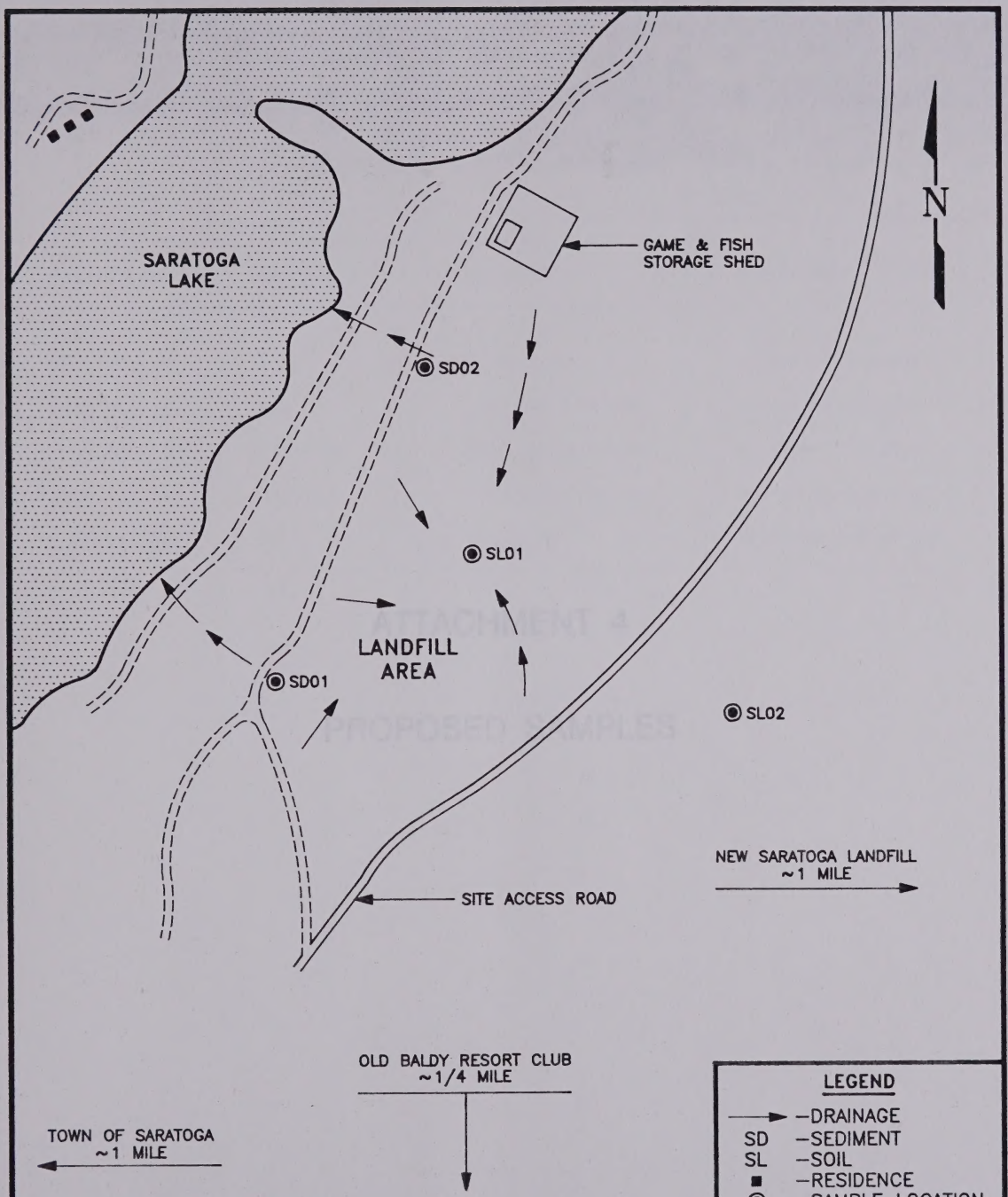
C C JOHNSON & MALHOTRA, P.C.

SCALE	ATTACHMENT
AS SHOWN	2
DATE	
SEPT. 1991	

ATTACHMENT 3

SITE MAP AND SAMPLE LOCATIONS





SOURCE: INITIAL SITE VISIT

SCALE	BUREAU OF LAND MANAGEMENT	ATTACHMENT
1"=500'	OLD SARATOGA LANDFILL RAWLINGS DISTRICT, WYOMING	3
DATE MAY 1991	SITE MAP	

C.C. JOHNSON & MALHOTRA, P.C.

ATTACHMENT 4

PROPOSED SAMPLES

OLD SARATOGA LANDFILL

PROPOSED SAMPLES
BUREAU OF LAND MANAGEMENT

SAMPLE ID	MATRIX	LOCATION	ANALYSES
SAR-PA-SL01	Soil	Background	Inorganics, Organics
SAR-PA-SL02	Soil	Low point in Landfill	Inorganics, Organics
SAR-PA-SD01	Sediment	SW Drainage to Lake	Inorganics, Organics
SAR-PA-SD02	Sediment	NW Drainage to Lake	Inorganics, Organics
SAR-PA-QC01	Water	Trip Blank	Volatile Organics only

ATTACHMENT 5

ORGANIC TARGET COMPOUND LIST (TCL)
AND
INORGANIC TARGET ANALYTE LIST (TAL)

TARGET COMPOUND LIST (TCL)
AND
CONTRACT REQUIRED QUANTITATION LIMITS (CRQL)*

VOLATILES	CAS Number	Quantitation Limits** water ug/L	Quantitation Limits** low soil/sediment[a] ug/kg
Chloromethane	74-87-3	10	10
Bromomethane	74-83-9	10	10
Vinyl Chloride	75-01-4	10	10
Chloroethane	75-00-3	10	10
Methylene Chloride	75-09-2	5	5
Acetone	67-64-1	10	10
Carbon Disulfide	75-15-0	5	5
1,1-Dichloroethene	75-35-4	5	5
1,1-Dichloroethane	75-34-3	5	5
1,2-Dichloroethene (total)	540-59-0	5	5
Chloroform	67-66-3	5	5
1,2-Dichlorethane	107-06-2	5	5
2-Butanone	78-93-3	10	10
1,1,1-Trichloroethane	71-55-6	5	5
Carbon Tetrachloride	56-23-5	5	5
Vinyl Acetate	108-05-4	10	10
Bromodichloromethane	75-27-4	5	5
1,2-Dichloropropane	78-87-5	5	5
cis-1,3-Dichloropropene	10061-01-5	5	5
Trichloroethene	79-01-6	5	5
Dibromochloromethane	124-48-1	5	5
1,1,2-Trichloroethane	79-00-5	5	5
Benzene	71-43-2	5	5
trans-1,3-Dichloro-propene	10061-02-6	5	5
Bromoform	75-25-2	5	5
4-Methyl-2-pentanone	108-10-1	10	10
2-Hexanone	591-78-6	10	10
Tetrachloroethene	127-18-4	5	5
Toluene	108-88-3	5	5
1,1,2,2-Tetrachloro-ethane	79-34-5	5	5
Chlorobenzene	108-90-7	5	5
Ethyl Benzene	100-41-4	5	5
Styrene	100-42-5	5	5
Xylenes (total)	1330-20-7	5	5

[a] Medium soil/sediment Contract Required Quantitation Limits (CRQL) for volatile TCL compounds are 125 times the individual low soil/sediment CRQL.

* Specific quantitation limits are highly matrix dependent. The quantitation limits listed herein are provided for guidance and may not always be achievable.

** Quantitation limits listed for soil/sediment are based on wet weight. The quantitation limits calculated by the laboratory for soil/sediment, calculated on dry weight basis as required by the contract, will be higher.

TARGET COMPOUND LIST (TCL)
AND
CONTRACT REQUIRED QUANTITATION LIMITS (CRQL)*

SEMIVOLATILES	CAS Number	Quantitation Limits** water ug/L	Quantitation Limits** low soil/sediment[b] ug/kg
Phenol	108-95-2	10	330
bis(2-Chloroethyl)ether	111-44-4	10	330
2-Chlorophenol	95-57-8	10	330
1,3-Dichlorobenzene	541-73-1	10	330
1,4-Dichlorobenzen	106-46-7	10	330
Benzyl alcohol	100-51-6	10	330
1,2-Dichlorobenzene	95-50-1	10	330
2-Methylphenol	95-48-7	10	330
bis(2-Chloroisopropyl)ether	108-60-1	10	330
4-Methylphenol	106-44-5	10	330
N-Nitroso-di-n-dipropylamine	621-64-7	10	330
Hexachloroethane	67-72-1	10	330
Nitrobenzene	98-95-3	10	330
Isophorone	78-59-1	10	330
2-Nitrophenol	88-75-5	10	330
2,4-Dimethylphenol	105-67-9	10	330
Benzoic acid	65-85-0	50	1600
bis(2-Chloroethoxy)methane	111-91-1	10	330
2,4-Dichlorophenol	120-83-2	10	330
1,2,4-Trichlorobenzene	120-82-1	10	330
Naphthalene	91-20-3	10	330
4-Chloroaniline	106-47-8	10	330
Hexachlorobutadiene	87-68-3	10	330
4-Chloro-3-methylphenol (para-chloro-meta-cresol)	59-50-7	10	330
2-Methylnaphthalene	91-57-6	10	330
Hexachlorocyclopentadiene	77-47-4	10	330
2,4,6-Trichlorophenol	88-06-2	10	330
2,4,5-Trichlorophenol	95-95-4	50	1600
2-Chloronaphthalene	91-58-7	10	330
2-Nitroaniline	88-74-4	50	1600
Dimethylphthalate	131-11-3	10	330
Acenaphthylene	208-96-8	10	330
2,6-Dinitrotoluene	606-20-2	10	330
3-Nitroaniline	99-09-2	50	1600
Acenaphthene	83-32-9	10	330

BLM Library
Denver Federal Center
Bldg. 85, OC-521
P.O. Box 25047
Denver, CO 80225

TARGET COMPOUND LIST (TCL)
AND
CONTRACT REQUIRED QUANTITATION LIMITS (CRQL)*

SEMIVOLATILES	CAS Number	Quantitation Limits** water ug/L	Quantitation Limits** low soil/sediment[b] ug/kg
2,4-Dinitrophenol	51-28-5	50	1600
4-Nitrophenol	100-02-7	50	1600
Dibenzofuran	132-64-9	10	330
2,4-Dinitrotoluene	121-14-2	10	330
Diethylphthalate	84-66-2	10	330
4-Chlorophenyl-phenyl ether	7005-72-3	10	330
Fluorene	86-73-7	10	330
4-Nitroaniline	100-01-6	50	1600
4,6-Dinitro-2-methylphenol	534-52-1	50	1600
N-nitrosodiphenylamine	86-30-6	10	330
4-Bromophenyl-phenylether	101-55-3	10	330
Hexachlorobenzene	118-74-1	10	330
Pentachlorophenol	87-86-5	50	1600
Phenanthrene	85-01-8	10	330
Anthracene	120-12-7	10	330
Di-n-butylphthalate	84-74-2	10	330
Fluoranthene	206-44-0	10	330
Pyrene	129-00-0	10	330
Butylbenzylphthalate	85-68-7	10	330
3,3'-Dichlorobenzidine	91-94-1	20	660
Benzo(a)anthracene	56-55-3	10	330
Chrysene	218-01-9	10	330
bis(2-Ethylhexyl)phthalate	117-81-7	10	330
Di-n-octylphthalate	117-84-0	10	330
Benzo(b)fluoranthene	205-99-2	10	330
Benzo(k)fluoranthene	207-08-9	10	330
Benzo(a)pyrene	50-32-8	10	330
Indeno(1,2,3-cd)pyrene	193-39-5	10	330
Dibenz(a,h)anthracene	53-70-3	10	330
Benzo (g,h,i)perylene	191-24-2	10	330

[b] Medium soil/sediment Contract Required Quantitation Limits (CRQL) for Semivolatile TCL compounds are 60 times the individual low soil/sediment CRQL.

* Specific quantitation limits are highly matrix dependent. The quantitation limits listed herein are provided for guidance and may not always be achievable.

** Quantitation limits listed for soil/sediment are based on wet weight. The quantitation limits calculated by the laboratory for soil/sediment, calculated on dry weight basis as required by the contract, will be higher.

TARGET COMPOUND LIST (TCL)
AND
CONTRACT REQUIRED QUANTITATION LIMITS (CRQL)*

PESTICIDES/PCBs	CAS Number	Quantitation Limits** water ug/L	Quantitation Limits** low soil/sediment[c] ug/kg
alpha-BHC	319-84-6	0.05	8.0
beta-BHC	319-85-7	0.05	8.0
delta-BHC	319-86-8	0.05	8.0
gamma-BHC (Lindane)	58-89-9	0.05	8.0
Heptachlor	76-44-8	0.05	8.0
Aldrin	309-00-2	0.05	8.0
Heptachlor epoxide	1024-57-3	0.05	8.0
Endosulfan I	959-98-8	0.05	8.0
Dieldrin	60-57-1	0.10	16.0
4,4'-DDE	72-55-9	0.10	16.0
Endrin	72-20-8	0.10	16.0
Endosulfan II	33213-65-9	0.10	16.0
4,4'-DDD	72-54-8	0.10	16.0
Endosulfan sulfate	1031-07-8	0.10	16.0
4,4'-DDT	50-29-3	0.10	16.0
Methoxychlor	72-43-5	0.5	80.0
Endrin ketone	53494-70-5	0.10	16.0
alpha-Chlordane	5103-71-9	0.5	80.0
gamma-Chlordane	5103-74-2	0.5	80.0
Toxaphene	8001-35-2	1.0	160.0
Aroclor-1016	12674-11-2	0.5	80.0
Aroclor-1221	11104-28-2	0.5	80.0
Aroclor-1232	11141-16-5	0.5	80.0
Aroclor-1242	53469-21-9	0.5	80.0
Aroclor-1248	12672-29-6	0.5	80.0
Aroclor-1254	11097-69-1	1.0	160.0
Aroclor-1260	11096-82-5	1.0	160.0

[c] Medium soil/sediment Contract Required Quantitation Limits (CRQL) for Pesticide/PCB TCL compounds are 15 times the individual low soil/sediment CRQL.

* Specific quantitation limits are highly matrix dependent. The quantitation limits listed herein are provided for guidance and may not always be achievable.

** Quantitation limits listed for soil/sediment are based on wet weight. The quantitation limits calculated by the laboratory for soil/sediment, calculated on dry weight basis as required by the contract, will be higher.

INORGANIC TARGET ANALYTE LIST (TAL)

Analyte	INSTRUMENT DETECTION LIMIT Water (ug/L)	INSTRUMENT DETECTION LIMIT Soil (ug/L)	CONTRACT REQUIRED DETECTION LIMIT Water (ug/L)	CONTRACT REQUIRED DETECTION LIMIT Soil (100% Solids) (mg/kg)
Aluminum	16	3.2	200	40
Antimony	21	4.2	60	12
Arsenic	34**	6.8**	10	2
Barium	1	0.2	200	40
Beryllium	1	0.2	5	1
Cadmium	5	1.0	5	1
Calcium	17	3.4	5000	1000
Chromium	5	1.0	10	2
Cobalt	3	0.6	50	10
Copper	4	0.8	25	5
Iron	4	0.8	100	20
Lead	31*	6.2*	3	0.6
Magnesium	56	11.2	5000	1000
Manganese	1	0.2	15	3
Mercury	0.2	0.1	0.2	0.1
Nickel	29	5.8	40	8
Potassium	1260	252	5000	1000
Selenium	62**	12.4**	5	1
Silver	4	0.8	10	2
Sodium	1490	298	5000	1000
Thallium	118**	23.6**	10	2
Vanadium	2	0.4	50	10
Zinc	1	0.2	20	4
Cyanide	10	0.5	10	0.5

* IDLs vary with instrument, analytical run, etc.

** ICP IDL's; graphite furnace IDLs are below the respective CRDLs required by the CLP SOW for these elements.

ATTACHMENT 6

PROPOSED SCHEDULE

SARATOGA LANDFILL

PROPOSED SCHEDULE
BUREAU OF LAND MANAGEMENT

TASK	COMPLETION DATE
Draft Project Plans	14-Jun-91*
BLM Review of Draft Project Plans	16-Sep-91*
Final Project Plans	04-Oct-91
BLM Project Plans Approval	07-Oct-91
Field Work Completion	11-Oct-91
Completion of Sample Analysis	11-Nov-91
Completion of Data Validation	25-Nov-91
Draft PA Report	09-Dec-91
BLM Review of Draft Report	08-Jan-92
Final PA Report	22-Jan-91

* Represents completed tasks

SITE

FIELD OPERATIONS PLAN

SITE FIELD OPERATIONS PLAN

1.0 SAMPLE COLLECTION AND HANDLING

All samples will be collected, preserved, identified and packed for shipment as specified in the CCJM BLM Project Standard Operating Procedures Manual (SOPM).

Soil samples will be collected as described in Section 2.6 through 2.6.4.7 et seq, of the SOPM. Sample handling, preservation, and shipping will be as described in the SOPM, QA Program Plan, Section 1.6.

2.0 FIELD INSTRUMENTATION

Major field equipment will consist of the following:

- Radiation and HNu instruments for personnel health and safety
- pH, conductivity, and water level meter for aqueous samples

3.0 DECONTAMINATION PROCEDURES

Decontamination procedures will be as specified in the CCJM BLM Project SOPM. Appendix B, "Standard Cleaning Procedures".

4.0 DISPOSAL OF SAMPLING MATERIALS

Soiled materials and protective clothing, if any, will be placed in plastic bags and put in a dumpster for disposal in a sanitary landfill.

SITE

HEALTH AND SAFETY PLAN

SITE HEALTH AND SAFETY PLAN FORM
CCJM Health and Safety Program

This document is for exclusive use of CCJM and their subcontractors

DOCUMENT #: _____

SITE NAME Old Saratoga Landfill Site SITE #688-021-PASAR LOCATION 1 mi East of Saratoga, WY REGION _____

PREPARED BY Scott Kendall DATE September 23, 1991 DOCUMENT # _____

FIRM C.C. Johnson & Malhotra, P.C. REVISION # _____

( ) AMENDMENT TO EXISTING APPROVED HSP ( ) DATE OF EXISTING APPROVED HSP _____

DESCRIPTION OF ACTIVITIES:

Preliminary Assessment (PA)	(X)	Clean-up	( )
Site Investigation (SI)	( )	Oversight	( )
Initial Investigation "Walk Through"	( )	Other specify	( )
Initial Investigation "Sampling"	( )		( )
USEPA Designated Task	( )		( )
Remedial Investigation (RI)	( )		( )
Feasibility Study (FS)	( )		( )

SITE TYPE: *Check as many as applicable*

Active	( )	Industrial	( )
Inactive	(X)	Recovery	( )
Secure	( )	Well Field	( )
Unsecured	(X)	Unknown	( )
Enclosed space	( )	Other Specify	( )
Landfill	(X)		( )
Uncontrolled	(X)		( )

SITE DESCRIPTION AND FEATURES: *Summarize below*

The Old Saratoga Landfill is an inactive sanitary landfill consisting of appproximately five acres of BLM administered land. This land was used by the Town of Saratoga until a new landfill was opened in 1978, approximately one mile east. The landfill is situated in a bowl shaped topographic depression, with the sides of the landfill sloping to a low point in the center of the landfill. It does not appear that any type of a cover has been placed over the landfill. Elevation of the landfill is approximately 6,860 feet above mean sea level (MSL). Saratoga Lake is located to the west and north of the landfill. Two drainages were identified as pathways for surface water migration from the landfill to the lake.

SURROUNDING POPULATION: ( ) RESIDENTIAL ( ) INDUSTRIAL (X) RURAL ( ) URBAN OTHER:

THIS PAGE RESERVED FOR SITE MAP

Map to delineate work areas where protective levels are to be enforced

See Attachment 3 in Project Plans

SITE HISTORY: *Summarize below*

The Old Saratoga Landfill was operated by the Town of Saratoga from an unknown starting date until 1978 when the new Saratoga landfill was opened. The earliest documented operation of the landfill is in 1968. It is beleived that the Town of Saratoga discontinued use of the old landfill when the new landfill was approved in 1978. If this is the case, then the minimum period of operation of the Old Saratoga Landfill is approximately 10 years.

KNOWN OR SUSPECTED WASTES DISPOSED: *Summarize below*

The precise volume and types of waste disposed of at the landfill is not known. The landfill has primarily been used for disposal of household refuse. The BLM case file indicates that there is no record of any hazardous waste disposed at the landfill. Since there is little industry in the Saratoga area, it is unlikely that the landfill received any hazardous waste.

HAZARD EVALUATION:

( )	Heat Stress *attach guidelines*	( )	Noise
( )	Cold Stress *attach guidelines*	(X)	Inorganic Chemicals
( )	Explosion/Flammable	(X)	Organic Chemicals
( )	Oxygen Deficient	( )	Other Specify
( )	Radiological	( )	
( )	Biological	( )	

PRINCIPAL DISPOSAL METHODS AND PRACTICES: *Summarize below*

BLM site inspection records for the site noted the following deficiencies: the landfill was located on BLM land without BLM permission and the physical requirements of soil, water table, and compatibility of surrounding land use for a sanitary landfill were not met.

PREVIOUS SAMPLING RESULTS/ANALYSES: *Summarize and list those with Health and Safety Concerns*

No previous sampling has been performed on site.

ENVIRONMENTAL INFLUENCES: *Summarize below*

Contamination of soils in the landfill and migration of contaminants to Saratoga Lake.

OVERALL HAZARD EVALUATION: ( ) High ( ) Medium (X) Low ( ) Unknown
(Where multiple tasks are being performed, complete Hazard Evaluation for each. Attach additional sheets as necessary).

JUSTIFICATION:

No evidence of disposal of hazardous wastes at the landfill.

CONTAMINANT	HIGHEST OBSERVED CONCENTRATION *(specify units and media)*	PEL/TLV *ppm or mg/m^3 (specify)*	IDLH *ppm or mg/m^3 (specify)*	WARNING CONCENTRATION *ppm or mg/m^3 (specify)*	SYMPTOMS/EFFECTS OF ACUTE EXPOSURE	PID POTENTIAL	PID FACTOR	FID FACTOR

Inorganic and/or organic chemicals from household products may be present.

NA = Not Available NE = None Established U = Unknown PID = Photo Ionization Detector FID = Flame Ionization Detector
S = Soil SW = Surface Water SD = Sediment GW = Groundwater A = Air T = Tailings

FIELD INVESTIGATION ACTIVITIES COVERED UNDER THIS PLAN

TASK DESCRIPTION/SPECIFIC TECHNIQUE – STANDARD OPERATING PROCEDURES/SITE LOCATION	TYPE	Primary	Contingency	SCHEDULE
1 Soil Sampling Sediment Sampling Water Sampling	Intrusive (Non – Intrusive)	A B C (D) (Modified)	A B (C) D (or evacuate)	
2	Intrusive Non – Intrusive	A B C D Modified	A B C D Modified	
3	Intrusive Non – Intrusive	A B C D Modified	A B C D Modified	
4	Intrusive Non – Intrusive	A B C D Modified	A B C D Modified	
5	Intrusive Non – Intrusive	A B C D Modified	A B C D Modified	
6	Intrusive Non – Intrusive	A B C D Modified	A B C D Modified	
7	Intrusive Non – Intrusive	A B C D Modified	A B C D Modified	

ACTIVITIES/TASKS OF GREATEST CONCERN: *Summarize below*

PROTECTIVE EQUIPMENT: *Specify by task. Indicate type and/or material, as necessary.*

BLOCK A TASKS: 1

RESPIRATORY: (X) Not needed
( ) SCBA, Airline:
( ) APR:
( ) Cartridge:
( ) Escape Mask:
( ) Other:

HEAD AND EYE: ( ) Not needed
(X) Safety Glasses: Optional
( ) Face Shield:
( ) Goggles:
(X) Hard Hat: Optional
( ) Other:

BOOTS: ( ) Not needed
(X) Boots: Steel Toed
( ) Overboots:

PROT. CLOTHING: ( ) Not needed
( ) Encapsulating:
( ) Splash Suit:
( ) Apron:
( ) Tyvek Coverall
( ) Saranex Coverall
( ) Coverall:
(X) Other: Long Legged Pants

GLOVES: ( ) Not needed
( ) Undergloves:
(X) Gloves: Disposable latex
( ) Overgloves:

OTHER: *Specify below*

BLOCK B TASKS: 1 Contingency

RESPIRATORY: ( ) Not needed
( ) SCBA, Airline:
(X) APR: Full-face
(X) Cartridge: GMC-H
( ) Escape Mask:
( ) Other:

HEAD AND EYE: ( ) Not needed
( ) Safety Glasses:
( ) Face Shield:
( ) Goggles:
(X) Hard Hat: Optional
( ) Other:

BOOTS: ( ) Not needed
(X) Boots: Steel Toed
(X) Overboots: Rubber

PROT. CLOTHING: ( ) Not needed
( ) Encapsulating:
( ) Splash Suit:
( ) Apron:
( ) Tyvek Coverall
(X) Saranex Coverall
( ) Coverall:
( ) Other:

GLOVES: ( ) Not needed
( ) Undergloves:
(X) Gloves:
( ) Overgloves:

OTHER: *Specify below*

BLOCK C TASKS: 1-2-3-4-5-6-7

RESPIRATORY: ( ) Not needed
( ) SCBA, Airline:
( ) APR:
( ) Cartridge:
( ) Escape Mask:
( ) Other:

HEAD AND EYE: ( ) Not needed
( ) Safety Glasses:
( ) Face Shield:
( ) Goggles:
( ) Hard Hat:
( ) Other:

BOOTS: ( ) Not needed
( ) Boots:
( ) Overboots:

PROT. CLOTHING: ( ) Not needed
( ) Encapsulating:
( ) Splash Suit:
( ) Apron:
( ) Tyvek Coverall
( ) Saranex Coverall
( ) Coverall:
( ) Other:

GLOVES: ( ) Not needed
( ) Undergloves:
( ) Gloves:
( ) Overgloves:

OTHER: *Specify below*

BLOCK D TASKS: 1-2-3-4-5-6-7

RESPIRATORY: ( ) Not needed
( ) SCBA, Airline:
( ) APR:
( ) Cartridge:
( ) Escape Mask:
( ) Other:

HEAD AND EYE: ( ) Not needed
( ) Safety Glasses:
( ) Face Shield:
( ) Goggles:
( ) Hard Hat:
( ) Other:

BOOTS: ( ) Not needed
( ) Boots:
( ) Overboots:

PROT. CLOTHING: ( ) Not needed
( ) Encapsulating:
( ) Splash Suit:
( ) Apron:
( ) Tyvek Coverall
( ) Saranex Coverall
( ) Coverall:
( ) Other:

GLOVES: ( ) Not needed
( ) Undergloves:
( ) Gloves:
( ) Overgloves:

OTHER: *Specify below*

MONITORING EQUIPMENT: *Specify by task. Indicate type, as necessary. Attach additional sheets, as necessary.*

INSTRUMENT	TASKS	ACTION GUIDELINES	COMMENTS
Combustible Gas/Oxygen Survey Meter		0 – 10% LEL No explosion hazard. 10 – 25% LEL Potential explosion hazard; notify SHSC. > 25% LEL Explosion hazard; interrupt task/evacuate. 21% O2 Oxygen normal. < 21% O2 Oxygen deficient; notify SHSC. < 19% O2 Interrupt task/evacuate.	
Radiation Survey Meter		< 3 x Background: Use Primary Protection > 3 x Background: Notify SHSC. > 2 mR/hr: Interrupt task/evacuate.	Note: Annual exposure not to exceed 100 mrem/ yr. or 50 urem/hr avg.
Photoionization Detector (X) 11.7 ev ( ) 10.2 ev ( ) 09.8 ev Type HNu	1	*Specify:* 2–5 ppm above background (sustained reading) : Increase level of protection to contingency	
Flame Ionization Detector Type _____		*Specify:*	
Direct–reading Detector Tubes Type _____		*Specify:*	
Direct–reading Dust Monitor Type _____		*Specify:*	
Other Specify		*Specify:*	

DECONTAMINATION PROCEDURES

ATTACH SITE MAP INDICATING EXCLUSION, DECONTAMINATION, AND SUPPORT ZONES

Personnel Decontamination *Summarize below and/or attach diagram; discuss use of work zones.*	Sampling Equipment Decontamination *Summarize below and/or attach diagram; discuss use of work zones.*	Heavy Equipment Decontamination *Summarize below and/or attach diagram; discuss use of work zones.*
Remove personal protective equipment (PPE), wash face and hands with soap and water. ( ) Not needed	Gross contamination will be removed on site. Equipment is then bagged and transported back to CCJM offices for decomtamination. ( ) Not needed	(X) Not needed
Containment and Disposal Method Bag up disposable protective equipment and dispose of in an approved manner.	Containment and Disposal Method	Containment and Disposal Method

SITE PERSONNEL AND RESPONSIBILITIES (include subcontractors)
(indicate if all personnel listed will be on-site)

NAME	FIRM/REGION	CCJM HEALTH CLEARANCE *	RESPONSIBILITIES
Rolf Riendl	CCJM	YES	Project Manager/Site Coordinato(1)-2-3-4-5-6-7
Sorin Schwartz	CCJM	YES	Sampling (1)-2-3-4-5-6-7

* Personnel listed on this page have been trained in accordance with the requirements of 29 CFR Part 1910.120, and have met the requirements of the CCJM medical surveillance and respiratory protection programs. The medical monitoring program entails, at a minimum, initial, annual and exit medical examinations and the provision for additional examinations when an overexposure is suspected. The respiratory protection program requires fit-testing and training in the proper selection, use and maintenance of respirators. Additional factors concerning medicals and training are discussed in the CCJM Health and Safety Program Manual.

EMERGENCY CONTACTS	PHONE
USEPA Environmental Response Team	201–321–6660
US Coast Guard Environmental Response Team	800–424–8802
Association of American Railroads Response Team	202–293–4048
CHEMTREC	800–424–9300

CONTINGENCY PLANS *Summarize below*

Evacuate site and notify appropriate authorities.

SITE HEALTH AND SAFETY PLAN APPROVAL

SHSC Signature _____ Date _____

CHSO Signature _____ Date _____

EMERGENCY CONTACTS	NAME	PHONE
Corporate Health and Safety Officer	Patsy Glinsman	(301) 942–5600
Project/Site Manager	Rolf Reindl	(303) 987–2928
Site Health and Safety Coordinator	Rolf Reindl	(303) 987–2928
BLM Site Contact		
USEPA Env Response	Emergency	(201) 321–6660
State Environmental Agency		
State Spill Contractor		
Fire Department		911
Police Department	Saratoga Police	1–307–326–8316
State Police	WY State Police	
Health Department		
Poison Control Center		911

MEDICAL EMERGENCY

Hospital Name: Carbon County Memorial
Hospital Address: 2221 W. Elm Street, Rawlins, WY
Phone Number of Hospital: 1–307–324–2221
Name of 24–Hour Ambulance: Medical Emergency
Route to Hospital:

North on Highway 130 from Saratoga to Interstate 80 West. Take the Spruce street exit in Rawlins.

Distance to Hospital: 45 Miles
Attach map with route to hospital

DESCRIBE PROCEDURES FOR SITE CONTROL ACCESS

NOT APPLICABLE

SITE

QUALITY ASSURANCE PLAN

SITE QUALITY ASSURANCE PLAN

1.0 SAMPLING PROCEDURES

All samples will be collected in accordance with standardized procedures applicable to the medium being sampled (soil, water, air or waste), as described in the project SOPM. Sampling procedures will be evaluated prior to and during use to verify accuracy, precision and reproducibility. Soil sampling will be as described in the project SOPM, Section 2.6; sample handling, preservation, and shipping will be as described in QAPP Section 1.6.

2.0 SAMPLE CUSTODY

Chain-of-Custody procedures will be implemented to document history of each sample and its handling from its collection through all transfer of custody until it is transferred to the CLP analytical laboratory. Field changes, field records and sample handling will be as described in QAPP Sections 1.4, 1.5, and 1.6, respectively.

3.0 CALIBRATION PROCEDURES AND FREQUENCY

All field measuring and testing devices (e.g., HNu, pH meter etc.) will be calibrated and adjusted at specified predetermined intervals using equipment and materials (i.e., calibration gases, standard pH solution etc.). All pertinent information will be recorded in the equipment calibration log book. Calibration procedures and frequency will be as described in QAPP Sections 1.1 and 1.7. Calibration procedures and frequency for laboratory analytical equipment and methodology will be as described in the the CLP 2/88 or 3/90 organics and 7/88 or 3/90 inorganics Statements of Work (SOW).

4.0 ANALYTICAL PROCEDURES

All CLP samples will be analyzed by a CLP analytical laboratory according to CLP protocols established by EPA, specifically the 2/88 or 3/90 organics and 7/88 or 3/90 inorganics SOWs. These protocols will form the basis for audits of laboratory practices and reviewing laboratory results.

5.0 DATA REDUCTION, VALIDATION AND REPORTING

All CLP data obtained from the analytical laboratory will be reduced and validated by CCJM according to EPA Functional Guidelines for Dtaa Validation. Environmental data will be evaluated using a manual and computerized data management systems. Data reduction, validation and assessment will be as described in QAPP Sections 1.2 and 1.8.

6.0 INTERNAL QUALITY CONTROL CHECKS AND FREQUENCY

Quality control checks will be performed to ensure that data is collected and reported in accordance with the procedures specified in the Project QAPP, Sections 1.0 and 2.0.

7.0 PERFORMANCE AND SYSTEM AUDITS

System audits of field sampling activities will be conducted to verify that approved procedures are in place and implemented, as described in QAPP Sections 1.0 and 2.0. Audits of the CLP laboratory will be made by EPA in accordance with CLP requirements.

8.0 PREVENTIVE MAINTENANCE

CCJM and the CLP analytical laboratory will perform preventive maintenance on all field and analytical equipment according to manufacturers guidelines or CLP requirements, in the case of analytical equipment, and schedule to avoid generating spurious environmental data, as described in QAPP Sections 1.1 and 1.7.

BLM Library
Denver Federal Center
Bldg. 85, OC-521
P.O. Box 25047
Denver, CO 80225